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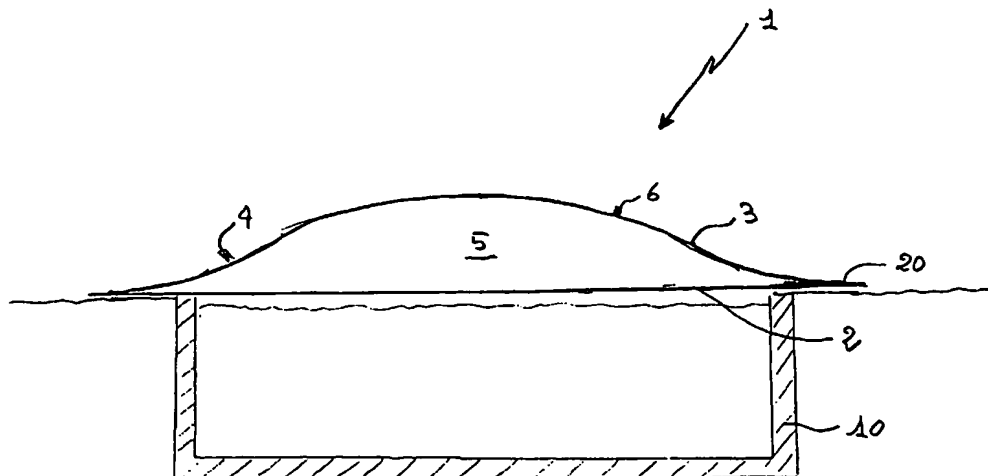
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ning of each regular issue of the PCT Gazette.

(54) Title: SWIMMING POOL COVERING SYSTEM



(57) Abstract: The invention described is a swimming pool covering system of the type comprising a basic tarpaulin (2) and a covering tarpaulin (3) which are, together, irremovably fixed along the perimetric edge, an inflation valve (4) envisaged for the inlet of air between the basic tarpaulin (2) and the covering tarpaulin (3) in order to realize a chamber (5) and give the covering tarpaulin an arched configuration, a deflation valve (6) envisaged for the release of the air contained within the chamber (5). The basic tarpaulin has a perimetric edge (20) fitted with means of engagement for the anchorage to the swimming pool edges. The covering system is conceived to be transformed from a resting condition, in which it is inactive and the tarpaulins are folded up and placed in a storage bag, to an operative condition, in which the basic tarpaulin is placed covering the swimming pool and is located substantially just above the waterline, while the covering tarpaulin is lifted off the basic tarpaulin creating an air chamber between the two tarpaulins.

DESCRIPTION

Swimming pool covering system

5

Technical field

This invention relates to a swimming pool covering system.

Background Art

10 As it is known, it is now common practice not to empty swimming pools during the winter any more, for various reasons such as, for instance, the need to not waste huge quantities of water, the dangers of an empty swimming pool, the maintenance and the cleaning that must be carried out before the subsequent refilling and others. In fact, the cleaning of a
15 swimming pool that has been emptied requires the presence of skilled labour provided with particular equipment to effect the cleaning without running the risks derived from exhaling the chlorine and other substances used in the course of the cleaning, in addition to the considerable water consumption when refilling the swimming pool and the need to warm said
20 water in order to use it, and also the indispensable system checks.

To avoid emptying the swimming pool, at present, the solution is to cover the surface of said swimming pool, protecting the water contained therein. The swimming pool covering system used nowadays is constituted of an impermeable plastic tarpaulin that covers the water and edges of the
25 swimming pool. More specifically, the tarpaulin used generally has an edge fitted with eyelets that are used to fix said tarpaulin by means of stakes if there is land around the swimming pool, or by means of ropes and weights if the edges of the swimming pool are vertical. Furthermore, in the event

that the tarpaulin is not fitted with eyelets, it is anchored to the edges of the swimming pool with stones or weights or anything else that can keep said tarpaulin still.

The swimming pool covering system, as just described, has revealed a
5 plurality of drawbacks.

A first drawback is derived from the fact that, sometimes, the tarpaulin used is rather light and therefore although it is more practical and manageable to move for the swimming pool covering operations and for its removal, it permits the light to filter through, therefore algae forms in the
10 water, which deteriorates and its preservation state alters.

A second drawback is experienced due to the fact that the tarpaulin is never perfectly horizontal and, with time, the central part of said tarpaulin tends to droop, therefore, during the winter period, the rain stagnates in the sunken part that has formed and with the leaves and other objects settle on
15 said tarpaulin, a rotting substance is created that becomes malodorous and, with the passing of time, stains the tarpaulin permanently which, consequently, becomes decidedly unpleasant to look at. In addition to everything mentioned up to now, at the end of the season the tarpaulin is difficult and bothersome to clean due to the material that has accumulated
20 during the period in which the swimming pool was covered, in addition to the fact that it is difficult to move the tarpaulin without risking spilling the dirt in the water in the swimming pool.

A further drawback that often occurs, emerges from the fact that, even if you manage to lay out the tarpaulin so that it is taut and does not create the
25 sunken area, leaves and other objects settle on the tarpaulin, therefore the tarpaulin becomes stained and can dirty the water during its removal. The drawbacks just outlined also cause a further drawback. In fact, by keeping the tarpaulin extremely taut a cavity is created between the surface of the

water and the tarpaulin containing a fair amount of air which enables the formation and development of the algae and microorganisms that cause the water to deteriorate.

In fact, the contamination of the water due to the presence of the algae
5 requires greater maintenance in terms of cleaning the water, in addition to the fact that said algae blocks the filters, which are extremely expensive, and the pumps overload with consequent damage and maintenance costs.

In addition to everything outlined so far and as mentioned earlier, it has been found that the algae alters the quality of the water forcing the
10 swimming pool user to carry out checks on the acidity of said water with the consequent necessity for a greater chlorine utilization, which is expensive and pollutes, in addition to being caustic due to various components such as couplings, joints, seals, discharge filters, etc. Consequently, although the swimming pool is covered, when the covering
15 is taken off there is a risk of having to empty the pool and change the water anyway as it has not been well preserved.

Another drawback that has emerged with the covering systems used at present is derived from the fact that said tarpaulins, as mentioned earlier, are quite light and so it happens that the water is not sufficiently insulated
20 and freezes, causing damage to the structure of the swimming pool and other objects.

The situation outlined above has shown a series of drawbacks: the considerable effort employed by the user to remove the tarpaulin when it is heavy with leaves, water and other objects, the deterioration of said
25 tarpaulin due to the lengthy presence of rotting substances, the effort employed in cleaning, in addition to the unattractive appearance during the winter period but above all during the following years due to the stains

present on the damaged tarpaulin, as well as the costs and the time needed for the maintenance and cleaning of the water and the swimming pool.

Disclosure of Invention

The aim of this invention is substantially to solve the problems of the well-known technology overcoming the drawbacks described above by means of
5 a swimming pool covering system, which is extremely easy to use and allows quick and easy maintenance.

A further aim of this invention is to realize a swimming pool covering system which enables the prevention of the formation of algae and
10 microorganisms in the water in the swimming pool.

A further aim of this invention is to realize a swimming pool covering system that ensures the water in the swimming pool does not freeze during the winter.

Last but not least aim of this invention is to realize a swimming pool
15 covering system which is simple to realize and functions well.

These aims and still others, which will better emerge over the course of this description, are substantially achieved by means of a swimming pool covering system which complies with the claims below.

These and other characteristics and advantages will better emerge in the
20 detailed description that follows of a swimming pool covering system illustrated, purely in the form of a non-limiting example, with reference to the enclosed drawing, in which:

- figure 1 shows, schematically and as a sectioned view, a swimming pool covering system as per this invention.

25 With reference to said figure, no. 1 refers to the swimming pool covering system as a whole, in accordance with this invention.

A swimming pool covering system 1 is substantially composed of a basic tarpaulin 2 and a covering tarpaulin 3 which, together, are irremovably fixed along the perimetric edge.

In particular, the basic tarpaulin 2, along its perimetric edge 20, is fitted
5 with means of engagement for the anchorage to the edges of a swimming pool 10. In more detail, said means of engagement are constituted of a plurality of eyelets which allow said tarpaulin to be anchored and fixed using stakes or straps connected to weights or to sand-filled rolls which create a continuous edge. In exactly the same way, the perimetric edge 20
10 has means of engagement constituted of a perimetric edge with a sac form which can be filled with water to constitute a ballast which keeps the perimeter of the basic tarpaulin well adherent to the swimming pool edge.

In more detail, the basic tarpaulin 2 and the covering tarpaulin 3 are arc-welded together, but they could equally be joined using warm air or
15 electrically.

The embodiment outlined, has an inflation valve 4 through which air is blown between the basic tarpaulin 2 and the covering tarpaulin 3 in order to realize a chamber 5 envisaged to give the covering tarpaulin an arched form in order to prevent rain water, leaves, dirt and anything else that could
20 ruin the covering tarpaulin remaining on said tarpaulin. Furthermore, the covering system according to this invention is fitted with a deflation valve 6 envisaged to allow the air present in the chamber 5 to leak out. Both the valve 4 and the valve 5 are of a substantially-known type.

According to this invention, both the basic tarpaulin and the covering
25 tarpaulin are realized with a plastic material which allows a very limited passage of light and the coupling of the two tarpaulins reduces this still further.

In accordance with this invention, the covering system comprises a storage bag in which to place the system when it is not used.

In addition to the above, the covering system 1 is conceived to be transformed, from a resting condition, in which it is inactive and the tarpaulins are folded up and fitted in the relative storage bag, to an operative condition, in which the basic tarpaulin is placed covering the swimming pool and is located substantially just above the waterline while the covering tarpaulin is lifted off the basic tarpaulin creating an air chamber between the two tarpaulins.

After the predominantly structural description, the invention in question will now be described from a functional perspective.

When a swimming pool needs to be covered during the winter season, the user simply has to remove the cover from the storage bag, where it is suitably folded, and unfold it according to the width of the swimming pool and lay it out parallel to the shorter edge of the swimming pool. Once the cover is positioned as just outlined, the user must simply unfold said cover according to the length of the swimming pool, until said swimming pool is covered entirely. After covering the swimming pool, the user anchors the basic tarpaulin to the ground by means of stakes engaged in the eyelets or with ropes and weights. Otherwise, if the edges of the basic tarpaulin have a sac form, the user must fill them with water, or if the basic tarpaulin has straps instead of eyelets, the user must simply engage the water-filled (or possibly sand-filled) rolls used to realize the ballast in order to prevent the basic tarpaulin moving. Once the basic tarpaulin anchorage operation is complete, all the user has to do is fill, via the inflation valve, the air chamber present between the basic tarpaulin and the covering tarpaulin creating a convex configuration of the covering tarpaulin in such a way that

the rain, leaves and other objects falling on the covering tarpaulin run towards the outer edge of the tarpaulin.

When the swimming pool covering system must be removed at the end of the season, the user simply has to deflate the air chamber, removing the air
5 present by means of the special deflation valves, and refold the two tarpaulins following the sequence of operations carried out at the beginning of the season in reverse order.

The user, then, before refolding or even removing the air, can clean the covering tarpaulin very simply and quickly using water and a sponge to
10 remove any dust that may have settled, taking care to dry the tarpaulin carefully to facilitate the correct preservation of said tarpaulin.

Once the cleaning, drying and folding operation is complete, the covering system is ready is to be put back into the special storage bag, returning it to the resting condition.

15 In this way the invention achieves the aims set.

In fact, the swimming pool covering system in question ensures that, with the presence of the double tarpaulin, there is absolutely no formation of algae and microorganisms as the light cannot filter though as it could with the simple tarpaulins used in the commonly-known technique, in addition
20 to the fact that the basic tarpaulin, being positioned just above the waterline, facilitates the good preservation of the water. In fact, the limited quantity of air present in the water and the basic tarpaulin and the presence of the air chamber between the basic tarpaulin and the covering tarpaulin reduces the temperature range of the water considerably, therefore leaving
25 the microbacterial flora normally present in the water stable and preventing the proliferation of said flora, besides preventing the reduction in the water temperature which cannot therefore reach freezing.

Furthermore, the covering system in question enables simple and easy cleaning with very little maintenance time required.

To its advantage, the covering system in question ensures the covering tarpaulin remains unaltered in terms of characteristics and colour, without
5 the presence of stains and rims typical of the covering resulting from the well-known technique.

In addition to the above, the covering system proves to be remarkably easy to use, in addition to the fact that the user no longer has to carry out physical efforts to move the tarpaulin with water and rotting leaves on top.

10 A last but not least advantage is due to the fact that the covering system proves to be simple to realize with good features.

A further advantage derived from the fact that the covering system in question can be applied to any form of swimming pool and any type of filled area which needs to be protected and covered.

15 Naturally, various embodiments of and alterations to this invention are possible without falling outside the field of the concept which characterizes it.

Claims

CLAIMS

1) Swimming pool covering system characterised by the fact that said system comprises a basic tarpaulin (2) and a covering tarpaulin (3) which, together, are irremovably fixed along the perimetric edge, an inflation valve (4) envisaged for the inlet of air between the basic tarpaulin (2) and the covering tarpaulin (3) in order to realize a chamber (5) envisaged to give the covering tarpaulin an arched configuration, a deflation valve (6) designed to release the air contained in said chamber (5), said basic tarpaulin having a perimetric edge (20) fitted with means of engagement for the anchorage to the edges of a swimming pool (10), said covering system being conceived to be transformed from a resting condition, in which it is inactive and the tarpaulins are folded up, to an operative condition in which the basic tarpaulin is placed covering the swimming pool and is located substantially just above the waterline while the covering tarpaulin is lifted off the basic tarpaulin creating an air chamber between the two tarpaulins.

2) A swimming pool covering system according to claim 1, characterised by the fact that said basic tarpaulin (2) and said covering tarpaulin (3) are arc-welded together.

3) A swimming pool covering system according to claim 1, characterised by the fact that said means of engagement on the perimetric edge (20) are constituted of a plurality of eyelets provided to restrain said tarpaulin by means of stakes or straps connected to weights or a sand-filled roll.

4) A swimming pool covering system according to claim 1, characterised by the fact that said means of engagement are constituted

of a perimetric edge with a sac form which can be filled with water to constitute a ballast to keep the perimeter of the basic tarpaulin (2) adherent to the edge of the swimming pool.

5) A swimming pool covering system according to claim 1, characterised by the fact that said covering system comprises a storage bag designed to contain the two tarpaulins in a resting condition.

6) A swimming pool covering system according to claim 1, characterised by the fact that both the basic tarpaulin and the covering tarpaulin are realized with a plastic material in order to allow a limited passage of light.

7) A swimming pool covering system according to claim 1, characterised by the fact that said tarpaulins (2 and 3) are joined together with hot air or electrically.

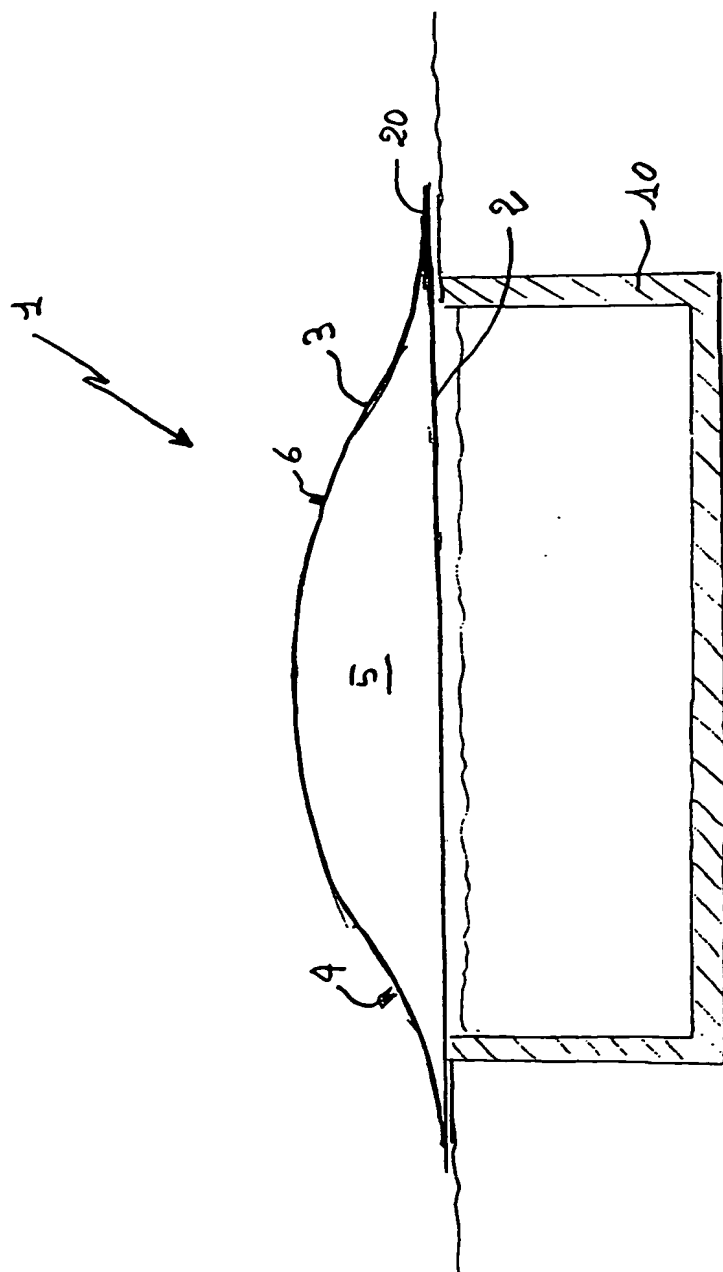


FIG. 1

INTERNATIONAL SEARCH REPORT

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IPC 7 E04H4/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	the whole document	2,3,7
X	DE 92 09 607 U (HENGST GÜNTHER) 22 October 1992 (1992-10-22)	1,6
A	page 2, line 8 - page 3, line 43; figure 1	2,7
A	US 6 286 157 B1 (BAUMANN BRIAN) 11 September 2001 (2001-09-11) column 2, line 53 - column 4, line 7; figures 1,2	1-3,5-7
A	DE 24 27 815 A (UNIVERSA HANDELS GMBH) 2 January 1976 (1976-01-02) page 8, line 1 - page 9, line 24; figures 1-8	1-3,6,7
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 652 373 A (AZUR INTER SERVICES) 29 March 1991 (1991-03-29) page 5, line 28 - page 7, line 15; figures 1,2 -----	1,2,6,7
A	FR 2 822 488 A (THEARD PATRICK) 27 September 2002 (2002-09-27) page 4, line 17 - page 5, line 34; figures 1-3 -----	1,2,6,7

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Information on patent family members

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